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The activities of a child guidance clinic which diagnoses and treats children with minimal cerebral dysfunction are described. Minimal brain dysfunction is explained, and diagnostic steps are discussed. As a major function of the program, neurological, optometric, auditory, oral, general physical, educational, and psychological evaluations are conducted, preferably at one center. Specific recommendations are then made according to the strengths and weaknesses revealed by the battery of tests. These recommendations often include special school, special class, additional training within a regular classroom, visual-motor training, counseling, relevant recreational programs, and parent counseling groups. Effective methods for presenting test findings to the parents are discussed, and the activities of parent counseling groups, which are viewed as an essential part of the clinical program, are described. A bibliography is included. (RT)

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Out-patient Diagnostic and Remedial Services for Children with Minimal Cerebral Dysfunction *

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The purpose of this paper is to present the activities of a child guidance clinic in relation to diagnosing and treating the very profound difficulties surrounding the child with "minimal cerebral dysfunction." Most of the comments will concern actual events at our clinic, and some proposals will be discussed. The focus will be on the application of what we now know rather than on the raising of theoretical issues. An effort will be made to bridge the wide gap that often exists between an evaluation at a clinic and the recommendations for remediation of psychological, behavioral, and educational problems. In this spirit it is hoped that the listener or reader will find the rather extensive references mentioned to be helpful in his present work. Although this paper concerns outpatient services, many of the issues raised are the same for inpatient services and some issues are especially relevant for schools.

The term "minimal brain dysfunction syndrome" is defined by Clements (1966) as referring to "children of near average, average, or above average general intelligence with certain learning or

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behavioral disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualization, language, memory, and control of attention, impulse, or motor function." Clements presents a detailed description of problems in nomenclature, symptomatology, and the importance of a complete diagnostic evaluation - including a medical evaluation and behavioral assessment. The ten outstanding characteristics of these children, in order of frequency, are hyperactivity, perceptual-motor impairments, emotional lability, general coordination deficits, disorders of attention (short attention span, distractibility, perseveration), impulsivity, disorders of memory and thinking, specific learning disabilities (reading, arithmetic, writing, spelling), disorders of speech and hearing, equivocal neurological signs and electroencephalographic irregularities. An excellent, detailed description of a diagnostic and treatment approach was given by Clements and Peters (1962). Although the above refers to children with average or above average intelligence, many of the diagnostic and remedial approaches are extremely helpful with children who are below average intellectually.

The initial problem then is recognizing when a child's behavior is due in any part to the minimal cerebral dysfunction syndrome. A monumental problem is the question of who is responsible for making a definite diagnosis. Is it the school

attended by the problem child? Is it the child's pediatrician? Is it the optometrist who checks his vision? The separate people involved usually feel a justified sense of inadequacy since they see only a part of the picture and cannot assume the responsibility of saying to the parents that their child is "brain injured" or "neurologically handicapped" or whatever term is used in that area of the country. There appears to be little question that centers are needed where a coordinated, complete evaluation may be done in one place. Our larger cities are beginning to develop these centers, usually in general hospitals. Since people usually do not get to centers, this paper is presented with the view of improving local services or even sensitizing local mental health facilities to refer appropriately. However, the customary case is still one in which various blind people are feeling different parts of the elephant. The result is that the child and his parents are caught in the bind of different professional opinions and advice. Not only doesn't the child improve, but the extremely important home atmosphere remains tense, angry, and confused.

The child, usually after a long time of being blamed and accused by teachers and parents who feel guilty for not being able to solve his problems, arrives at the child guidance clinic. Most clinics are still so psychodynamically oriented that they are very frequently insensitive to possible organic etiology - not only related to minimal cerebral dysfunction but also to psychosis (Kysar, 1968). Hertzig and Birch (1968) reporting on a total of

100 male adolescents and 104 female adolescents admitted to a psychiatric hospital found the "frequency of occurrence of neurologic abnormality as measured by each of the four indicators of dysfunction examined, far in excess of the frequency found in psychiatrically unremarkable comparison groups..." Concerning academic failure in young children, Denhoff et al.(1968) found in many intellectually normal children an inability to process sensory information and produce an efficient motor response. What these authors call "psychoneurological inefficiency" is an important term to consider, in view of that fact that over 50% of our clinic's referrals are for academic failure. Furthermore, it is quite significant that many authors' warnings about the behavioral effects of early brain injury have gone unheeded. An excellent example is the study of pregnancy complications where Pasamanick and Knobloch (1961) warn that, "The interactions between behavioral dysfunction in the infant as a symptom of minimal cerebral injury and maternal tension, illness, hospitalization, and psychologic injury, eventually followed by further dysfunction and tension, should be considered as possible causes of behavioral difficulties later in childhood."

At the author's clinic, where diagnoses are usually made in conjunction with other evaluations, out of the most recent successive 50 cases of children from 5-0 to 10-11 years of age, 21 were seen as having a significant degree of cerebral dysfunction. Therefore, 42% were categorized according to psychiatric nomenclature

as having a chronic brain syndrome. There were 16 boys and 5 girls so classified. Of the 50 successive cases, 27 had serious visual-motor problems as measured by the Bender Gestalt Test and the Draw-a-Person Test. 17 had average visual-motor development and only 6 were above average. Very significant to us is the fact that of the children with very serious visual-motor lags, 14 were seen as having a cerebral dysfunction and 13 were not. We are now trying to investigate the significance of this. Is it possible that visual-motor deficits cause behavioral and emotional problems? Is it possible that subtle psycho-neurological dysfunctions underly behavioral disorders? There are many environmental (psychological, educational, etc.) factors that could lead to measured visual-motor deficits, but the final answer seems far from being at hand. It is important to mention here that our diagnoses were often seen by other professionals as being highly questionable. The judgement and opinions of people who have already evaluated and/or treated these children unfortunately are very sensitive areas, which are not easily susceptible to change. Public schools often found themselves disagreeing with our evaluation and recommendations. Should a child with at least average intelligence stay in a regular class where he is failing and is three years below grade level? Should he receive special academic or perceptual-motor training? Should he be in a special class or school? The best solution to these questions often gets buried under political and monetary considerations.

Diagnosis

As previously mentioned, ideally a center should completely evaluate a child. A description will follow of what an out-patient clinic might do. A complete developmental, academic, and medical history is gathered from the parents and all other sources involved with the child. Since many professionals at clinics are new to the field, a most significant question is how to sensitize them as to what to look for in the history and in the child's behavior which might suggest a neuropsychological dysfunction. This author circulates much material on these issues to the clinic staff as it becomes available. Useful resources for us have been many pamphlets distributed by associations concerned with these special children such as the N.J. Association for Brain Injured Children, California Association for Neurologically Handicapped Children, etc. All of our new workers receive a packet called The Brain-Injured Child by the National Society for Crippled Children and Adults. This is a collection of pamphlets and lists on many different aspects of the problem, such as description of the child, parent counseling, education, many references, etc. Books by Birch (1964), Bortner (1968), Cruickshank (1967), Ellingson (1967), and Frierson and Barbe (1967) are recommended reading and are available in the clinic's library. An attempt to integrate neurological, educational, and psychological information has recently been described by Gaddes (1968). The aim

is that all of our professional staff be familiar with the important historical and behavioral factors. Therefore, when a question is raised, the next step is usually psychological testing.

Psychological Evaluation - Books that are useful to our psychologists are Burgemeister (1962), Taylor (1961), Glasser and Zimmerman (1967), and especially Khanna (1968). When a question of neuropsychological deficit is raised, a standard battery is given including the Wechsler Intelligence Scale for Children, Figure Drawings scored according to Harris (1963), Bender Visual-Motor Gestalt Test, scored according to Koppitz (1964), Rorschach, and perhaps some Thematic Apperception Test cards. Any child over 8½ is given a memory for designs test measuring "brain damage" (Graham & Kendall, 1960) or a visual retention test (Benton, 1963). Children up to the age of approximately 11 are given a test of visual perception (Frostig, 1964). A test of psycholinguistic ability (Kirk et al, 1968) or a test of auditory discrimination (Wepman, 1958) are given in selected cases. The Lincoln-Oseretsky motor development scale (1954) may be used to test the motor ability of children from 6 to 14 years of age. Gross and fine motor coordination is always assessed in order to give a total picture of the child's functioning. There are several other tests that we use occasionally, but our diagnostic and remedial recommendations may usually be made on the basis of the above tests. It should be stressed here that although our clinic uses these psychological tests, we believe that a more complete and more adequate assessment would be possible in a

specialized center where people are trained in the use of all of the sophisticated instruments available. It is significant that the diagnostic and treatment work of Reitan (pre-publication copy, 1967) is to a great extent not used in clinics nor even referred to as important indicators of behavioral cues in evaluating deficits. The Halstead Neuropsychological Test Battery has not been taught to psychologists in training and is extremely expensive for a child guidance clinic. It appears to be another case where children are not being evaluated to the best of our collective knowledge. An example of using computerized test profiles in neuropsychological assessment is described by Knights and Watson (1968). The test battery used includes many of the Halstead-Reitan tests.

One procedure which we are following more frequently in recent times is the coordinated assessment mentioned in this paper. When possible, the child is taken to a center that does the neurological, optometric, auditory, speech, general physical (including many specific tests of blood, endocrine, etc.), educational, and psychological evaluation. Armed with a complete evaluation, that center can make meaningful recommendations, and along with their and our own recommendations, we can follow them through. When this is not possible, we have worked out the following system.

1) Pediatric Neurological Evaluation - including an electroencephologram. The neurologist (we recommend several names of people whom we think are experienced in diagnosing minimal cerebral dysfunction) sends us his report.

2) Developmental Optometric Evaluation - The optometrist sends us his report which aids in our evaluation. He frequently prescribes a training program and follows through with the parents.

3) In cases where we see any indications of speech or hearing difficulties, we refer to a speech and hearing evaluation center.

In cases where we suspect other deficits, we refer to appropriate practitioners. However, we find the above three procedures to be quite important. Extensive literature is usually available from local neurological and optometric associations. One example of an attempt to sensitize teachers to a child's visual difficulties is a guide with a detailed checklist of observable clues to classroom vision problems (Optometric Extension Program, 1968).

Recommendations

Based on Psychological Tests: The end result of the psychological testing is not just to say that the child has a neurological problem and should be treated in a special way or have "special education." Hopefully, specific recommendations may be made based upon the strengths and weaknesses revealed by the most sophisticated battery of tests that can be assembled. An example of this approach based mainly on the Wechsler Intelligence Scale for Children may be found in Spraings (1963). The spirit of this approach is that a weakness on a sub-test can be translated into a meaningful recommendation for

training. Poor abstract ability may be improved by having the child categorize various objects, weak vocabulary may require enriching the child's experience and providing the opportunity to describe things in words, poor judgement and reasoning may require detailed explanations discussing cause and effect and other activities designed to promote a conceptual type of thinking, etc. Other specific recommendations for training naturally arise from the previously mentioned Frostig and the Illinois Test of Psycholinguistic Abilities. Training may be indicated in recognizing figure from background, eye-motor coordination, auditory or visual memory of sequence, etc. The recommendations which are made are hopefully followed through by the school, outside groups, or the clinic. Coordinating efforts is a difficult task since there is such fragmentation of services. Really complete diagnostic services provided by a school system could possibly lead to proper education and any needed counseling or psychotherapy administered in one location.

Based on Complete Evaluation: It still appears to be an art rather than a science to assemble all of the data and conclude what further steps should be taken. We are hopefully moving more toward an accurate total assessment with conclusions and recommendations following logically. A very heated issue is the basic question of whether or not it is essential that the child be labelled as having a cerebral dysfunction. From one point of view it is irrelevant, if we hold to the notion of giving the child what he needs and

strengthening any weakness regardless of its origin. On the other hand, unfortunately many recommendations are not followed if the child is not labelled. A most important issue is that in discussing the child with the parents or doing counseling with the parents a frequently raised question is causality of behavior. If neurological or perceptual deficits are not discussed and labelled, one often does not touch upon the attitudes of the parents and their acceptance of the child.

The recommendations are based on the total evaluation and discussed in as much detail and in as much time as is necessary for the parents. Individual sessions are held with the parents to explain what the child's weaknesses are, what we think causes them, and what should be done about them. How to tell parents about the child's difficulties is a crucial matter. Pediatricians (and other professionals) often impart information in a discouraging or confusing way to parents (Millman, 1967). In fact, a very destructive practice has been for some professionals (neurologists for example) to tell parents that there are no neurological problems, and then to say in a report that the child has a minimal cerebral dysfunction. There have been instances where neurologists resented any other professional suggesting that there was a neurological deficit as a basis for problem behavior or poor learning. There is a need for detailed explanations of the child's behavior and performance on specific tasks. The interviewer must be able to deal effectively with the parents' emotional reactions when they are told that there

is something wrong with the functioning of their child's brain. This author shows parents the actual performance on tests and discusses in detail what it means about the way the child perceives the world, functions in it, and reacts to it with frustration, anger, and feelings of inadequacy. The parents usually find this to be dramatic and report that they really can appreciate the child's difficulties. Stover (1968) presents a technique where parents experience the profound difficulty of having a visual-motor deficit. The parents are asked to perform a very difficult star tracing task by using a mirror, while being under the stress of criticism from the examiner. We have used this technique without interviewer-stress, and have found that parents still react with more "empathic understanding." In some instances, however, interviewer stress may well add a demension to parental understanding.

It is clear then, that the manner of presenting what findings we do have may set the tone for the parents' reception of the following recommendations (which are frequently made at our clinic).

A. Special school, special class, or additional training within a regular class. This recommendation depends upon the severity of the problem and the child's ability to progress where he is placed at present. The very complicated and heated issue is raised (which cannot be dealt with here) as to what the school can afford to provide for the child. This recommendation is sometimes followed, but often ignored. An example

of a concrete program to aid the teacher in working with the child with learning disabilities is described by Valett (1967). It has come to our attention that some special education teachers are unaware of the Instructional Materials Centers (described at length in the December, 1968 issue of Exceptional Children). Some teachers are not making use of workshops, instructional materials, etc. that are designed for the proper education of the special child we are discussing. In order to more adequately prepare teachers Gaddes (1968) proposes that teachers (especially of children with learning disorders) be given special training in the structure and function of the central nervous system and possible relationship to classroom learning. As part of our activities, we try to work with the school when making an educational recommendation. It is often a delicate and important job to communicate our knowledge to the schools. Some systems have been very receptive and some have been completely rejecting of our approaches.

B. Medication by the pediatrician, neurologist, or by the clinic psychiatrist. The issue of who will follow the patient and regulate drugs sometimes presents a problem. However, the basic question is whether or not drugs are indicated. Again, this is somewhat controversial, but there are growing reports of vastly

improved behavior and better academic performance in many cases following the use of medication.

C. Developmental Optometrist - for complete visual evaluation and visual-motor training in areas of deficit. Frequently, optometrists incorporate many gross visual-motor activities. A recent example is Getman et al. (1968) who describe a detailed learning readiness program based on the development of motor, tactile, and visual skills. Another example is Groffman (1968) who outlines specific diagnostic procedures standardized by age to give a base line of an individual's perceptual functioning. He describes an operant conditioning training program which results in improved perceptual functioning, lessening of behavioral symptoms, and improved academic achievement.

D. Individual or group counseling or psychotherapy for the child when indicated. Traditional psychotherapy or counseling, however, is often not effective (Gordon, 1966) whereas "big brother or sister" programs are frequently very meaningful. Volunteers can be supervised by the clinic staff to work individually or in a group to help children with their very real problems in coping with everyday activities and social interactions. The same service may also be provided

directly by the clinic personnel.

E. Parents join appropriate Associations. Locally, we recommend the N.J. Association for Brain Injured Children. We also often recommend other appropriate learning disability, retarded, etc. local or national associations. This not only serves the valuable purpose of parents meeting others in the same situation but it appears to be the best way of assuring that relevant and new literature becomes available to parents. Parents also have the opportunity to participate in unified action to obtain better diagnostic, treatment, and educational facilities. Also, local associations often sponsor appropriate activities for the children.

F. Recreational programs including specific gross and fine visual-motor activities. There has recently been an enormous amount of information regarding training of children who are awkward and have poor coordination. Since there was a need for our clinic to refer children for appropriate training, we initiated and helped conduct a recreation and socialization program (Gordon & Golob, 1966). Many difficulties, important issues, and specific methods are presented in the above publication. The present author described a recreational program for adolescents,

which included desperately needed training in coordination (Millman, 1966). In addition, isometric exercises were designed to increase muscle strength, provide kinesthetic feedback, and help improve the child's "body image." A specially designed swimming program was also instituted in order to teach swimming and to improve coordination. Some very helpful information concerning detailed descriptions and rationales for many kinds of visual-motor activities and training may be found in the following: Ayres (1964), Barsch (1967), Getman & Kane (1964), Knights & Thompson (1966), Perception Development Research Associates (1966), and Sutphin (1964).

G. Parent counseling groups - these are considered an essential part of our recommendations. At times, we have found it very effective to have both parents in a group, although no services were offered at the clinic for the child. One extremely important aspect of the group is to provide an on-going experience where clinic recommendations may be discussed and followed through with the help of the group leader. The present author has, and is, conducting such groups, and a major parental feeling that emerges is that the endless buck-passing of responsibility has ended. Our experience when

recommendations were discussed in one or two interviews was that many parents were unable to follow through or be assertive enough to obtain what was needed. The parent group is free wheeling, but basically two elements emerge: 1) Information is imparted regarding cerebral dysfunction, how it effects the child's behavior, and how to handle the child most effectively. 2) Discussion takes place of feelings and attitudes of the parents towards their child and their acceptance of having a child who is "different." Barsch (1961) describes a similar type of counseling group and mentions appropriate techniques.

Specific questions are answered directly. Some frequently asked questions are how to control hyperactive children or how to help the easily frustrated child who has emotional outbursts. This author discusses conditioning techniques and other appropriate methods as described in the current literature (Luszki, 1968; Pollack, 1968) with the parents in order for them to be more helpful to their children. In some instances, a discussion of attitudes prior to answering a "how to" question is an effective way of illustrating to the parents why their well-intentioned methods may not work. After

being in many frustrating situations, the parents feel angry and their expectations often have been that their child could do better if he would only try. Some issues discussed are real acceptance of the child's limitations and the parents' need to provide the proper environment and determine the best strategy for handling the child effectively. The result of group attendance has led to the majority of parents reporting better results in their contacts with their children. A significant key for most parents is the changing family atmosphere promoted by their greater understanding of the child, often accompanied by their feeling less guilty and less angry. Parents talk of feeling less irritable and more tolerant of the child. In the group, we distribute any appropriate literature. Parents have found the many pamphlets quite helpful. Books that have helped parents significantly are Cruickshank (1967), Siegel (1961), and Lewis et al. (1961). One issue that is always discussed concerns telling the child what is wrong with him. Some parents fear labels, but can discuss the behavioral difficulties of the "nervous system not being well coordinated." Different labels are appealing to different parents for <u>their</u> own understanding; more

palatable labels have been maturational lag, neurological difficulties, central nervous system dysfunction, hyperkinetic syndrome, brain dysfunction, and perceptual difficulties. Many parents are often reluctant to say anything to the child. However, parents respond to the "truthful" approach that something really is wrong with the child. Much time is spent on discussing the tailoring of the comments to the level of comprehension of the child. We discuss the parents communicating to the child in his language that he does have serious difficulties and that he is different from other children in some respects. Some parents like the idea of their child reading about "brain injury" on a level written for children (Gardner, 1966).

It was originally proposed that a group would meet for ten sessions. This turned out to be impractical administratively and not well suited to the parents' wishes. We now have open-ended group meetings, where the parents attend one hour or one and a half hours, each week for as long as they desire. We usually maintain 10 to 12 parents in the group; sometimes only a child's mother attends. Until now, the average duration of group attendance has been approximately 11 sessions, with a range from 4 to 30

sessions.

Conclusion

The problem of who is going to diagnose minimal cerebral dysfunction has been discussed. If a mental health clinic treats children, then that clinic must assume responsibility for adequate diagnoses. Despite much research and increased knowledge, many treatment centers still disregard a less than blatant cerebral dysfunction, and assume emotional factors as the cause of all behavioral and learning problems. Mental health or child guidance for children with minimal cerebral dysfunction means that the child is diagnosed adequately and that appropriate and effective remediation follows. This usually means extensive collaboration and consultation with other community agencies, private practitioners, and school systems. The buck passing must stop.

It appears necessary that many outpatient centers must change their orientation in order to recognize and plan for children with cerebral dysfunctions. The same surely is true for public schools, where our described "problem" child is often suspended or sent for psychotherapy to a mental health center. A recent informal survey by the author suggests that many inpatient day and residential centers are not providing the kind of services described in this paper. We must end the pressure and extreme hardship on children whose improperly functioning central nervous systems remain unrecognized. Their life in the family, school, and community may be vastly improved when our present knowledge is applied.

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